



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/870,771	06/01/2001	Takaya Sato	8292.029	1304

7590 01/27/2004  
APEX JURIS PLLC  
13194 EDGEWATER LANE NORTHEAST  
SEATTLE, WA 98125

EXAMINER

CANTELMO, GREGG

ART UNIT PAPER NUMBER

1745

DATE MAILED: 01/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/870,771

Applicant(s)

SATO ET AL.

Examiner

Gregg Cantelmo

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3,4 and 7-10 is/are pending in the application.
- 4a) Of the above claim(s) 7 and 8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,9 and 10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

1. In response to the amendment received December 5, 2003:
  - a. Claims 1, 3, 4 and 7-10 are pending with claims 7 and 8 withdrawn from consideration. Claims 2 and 5-6 have been cancelled as per Applicant's request;
  - b. The 102 rejection to the admitted prior art of record is withdrawn in light of the amendment;
  - c. The 102 rejection to Tanaka is withdrawn in light of the amendment.

### ***Specification***

2. The substitute specification filed December 5, 2003 has not been entered because it does not conform to 37 CFR 1.125(b) and (c) because: there is no statement by Applicant that no new matter has been entered.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Art Unit: 1745

5. Claim 10 provides for the use of the electrode, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim 10 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 3, 4, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent No. 5,462,820 (Tanaka), of record.

Tanaka teaches of a method of manufacturing an electrode structure comprising an electrode material, binder and solvent onto a current collecting member and directing warm breeze onto the compound mixture to gradually vaporize the solvent and form an electrode film on the current collecting member. The prior art teaches of using air at 20-350 °C and preferably 40° C to 200° C. The speed of the air ranges from 0.1 to 100

Art Unit: 1745

m/sec and preferably 1 to 30 m/sec (col. 5, ll. 1-10). 0.1 m/sec and 1 m/sec being specific data points in the instant claimed range (as applied to claim 1). The air is controlled at preferable temperatures from 40-200° C and a preferable rate of 1-30 m/second (as applied to claim 1).

At a temperature of 40-200° C, and an additional teaching of drying via low-moisture air (i.e. dry air) this range will inherently provide a dry air heat (col. 1, 5, ll. 2-10 as applied to claim 3).

The mixture contains an electrically conductive material (Example 1 and col. 3, line 4 through col. 4, line 9 as applied to claim 4).

The polymer separator is disposed between the electrodes and effectively coats the electrode surfaces facing one another at the electrolyte (Example 1). Additionally the separator becomes ion-conductive by absorbing some of the electrolyte solution injected into the battery (col. 12, ll. 25-33 as applied to claim 9).

The structure is used for a battery (abstract as applied to claim 10).

The difference between claim 1 and Tanaka is the scope of the ranges of the speed of the air and temperature of the air.

As discussed above the lower portion of the range of Tanaka and specific data points of 0.1 m/sec and 1 m/sec are explicitly within the range of claim 1 and thus are held to be a clear teaching of this range.

With respect to the temperature: Tanaka teaches of a temperature range from 20-350°C and preferably 40°C to 200°C. The instant claim recites a range of 60-150°C.

Art Unit: 1745

When a solvent remains in the depolarizing mix for the electrode, a drying step is employed using dry air at a temperature range from 20-350°C and preferably 40°C to 200°C and a wind velocity from 0.1 to 100 m/sec, preferably 1 to 30 m/sec.

The preferable range of 40-200 °C encompasses the instant claimed range.

It has been held that when the difference between a claimed invention and the prior art is the range or value of a particular variable, then a prima facie rejection is properly established when the difference in the range or value is minor. Titanium Metals Corp. of Am. v. Banner, 778 F.2d 775, 783, 227 USPQ 773, 779 (Fed. Cir. 1985). In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919, F.2d 1575, 16 USPQ 2d 1934 (Fed. Cir. 1990).

In reviewing the overall teachings of Tanaka, there is sufficient disclosure to lead one of ordinary skill in the art to employ any combination of speeds and temperatures within the range of Tanaka for the purpose of evaporating the solvent from the mixture.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Tanaka by selecting any temperature and air speed in the range of Tanaka since it would have provided sufficient means for evaporating the solvent from the electrode. It has been held that when the difference between a claimed invention and the prior art is the range or value of a particular variable, then a prima facie rejection is properly established when the difference in the range or value is minor. Titanium Metals Corp. of Am. v. Banner, 778

Art Unit: 1745

F.2d 775, 783, 227 USPQ 773, 779 (Fed. Cir. 1985). In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919, F.2d 1575, 16 USPQ 2d 1934 (Fed. Cir. 1990). Generally, differences in ranges will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such ranges is critical. In re Boesche, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). In re Hoeschele, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969).

### ***Response to Arguments***

8. Applicant's arguments filed December 5, 2003 have been fully considered but they are not persuasive.

Tanaka teaches of a temperature range from 20-350°C and preferably 40°C to 200°C, as well as speeds from 0.1-100 m/sec, preferably 1-30 m/sec.

The instant claim recites a temperature range from 60-150 °C, as well as speeds from 0.1-3 m/sec.

The background disclosure of the instant application is not linearly applicable to the teachings of Tanaka since the range of temperature and air speed in the background art and that of Tanaka are not identical.

As discussed above the breadth of Tanaka is held to encompass both the temperature and air speed of the breeze recited in the instant claims. It has been held that when the difference between a claimed invention and the prior art is the range or

Art Unit: 1745

value of a particular variable, then a prima facie rejection is properly established when the difference in the range or value is minor. Titanium Metals Corp. of Am. v. Banner, 778 F.2d 775, 783, 227 USPQ 773, 779 (Fed. Cir. 1985). Furthermore, in the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919, F.2d 1575, 16 USPQ 2d 1934 (Fed. Cir. 1990). Generally, differences in ranges will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such ranges is critical. In re Boesche, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). In re Hoeschele, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969).

There is no evidence supporting Applicant's arguments which shows that the claimed range achieves unexpected results relative to the prior art range. Therefore while the prior art of Tanaka may not explicitly teach of the narrower claimed ranges, there is sufficient teaching in the prior art of Tanaka to use any combination of temperature and air speed to evaporate the solvent from the electrode and insufficient evidence that the instant claimed range achieves unexpected results relative to the range of Tanaka.

Therefore the prior art rejection stands.



Art Unit: 1745

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregg Cantelmo whose telephone number is (571) 272-1283. The examiner can normally be reached on Monday through Thursday from 8:00 a.m. to 5:30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan, can be reached at (571) 272-1292. FAX communications should be sent to FAX number: (703) 872-9306. FAXES received after 4 p.m. will not be processed until the following business day. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1700.

Gregg Cantelmo  
Patent Examiner  
Art Unit 1745

gc



January 28, 2004